



# AgSpeak™

Vol. 7, No. 1



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Incineration



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Inflation has set into the U.S. economy and many other countries' economies as well. Managing finances, both personal and business, becomes much more difficult during a period of rising prices. Finding targets for cost cutting becomes much more urgent.

But is cost cutting the right thing to do? Perhaps cost control is a better goal. Even in the tough times, it makes sense to make targeted investments, keep up with necessary maintenance, and pursue innovation.

VAL-CO® will continue to focus on being the best company in our industry by investing in our people, innovating the best products, and making sure we deliver the best customer experience possible. We know that to grow, we must deliver value by providing exceptional quality, innovation, and service. We know that producers have choices when it is time to upgrade or build new facilities.

It may be tempting to buy the least expensive equipment when prices are increasing everywhere. But producers that focus on value will gain the best payoff from their investment. Quality, innovation, and service will deliver the return that producers need to thrive.

This issue of AgSpeak shows how VAL-CO delivers value with the Fortica® controller and the Liberty One™ Aviary Colony Nesting System. Top-quality products like these will help you finish on top!

**Phil Risser**

*President & CEO*

Valco Industries, Inc.



# Flock Management



## Management is Key in Reducing Mortality

by *Ericka Mongeau*

If you want to improve your final live weight and feed conversion, you need to achieve good 7-day livability. So much of a bird's final potential rests on the first seven days of life, where frame development and immune system maturation lay the foundation for healthy growth. Nutrition, feed availability, water quality and accessibility, temperature, air quality, and light are all critical to early development and reduced mortality, both early and late in the flock.

### Nutrition

Most integrators have teams of nutritionists and veterinary scientists working to optimize feed rations for each phase of growth for

their birds. Independent producers must rely on the feed companies to do so, but in both cases the underlying principles are the same. Feeding a high energy diet to maximize growth makes birds more susceptible to ascites, sudden death syndrome, and leg problems, especially if growing birds at high altitudes (>1000m above sea level) where ascites already has a higher prevalence.

It's better to feed a lower energy diet complete with macro and micronutrients that promote steady growth. Note that a prolonged low energy diet may

result in lost weight and additional time to hit market weight. If purchasing your own feed, consult your nutritionist regarding the optimal diet and time frame for your breed and region.

### Feeding

Early flock mortality often peaks in the first few days of placement. Around 3-4 days, any energy from



the yolk sac (which was absorbed just before hatching) will have been used up. Birds must have found adequate food and water to sustain themselves. Chicks should have access to feed and water immediately at placement. Use chick paper or starter feeders for the first few days, and provide access to pans, so that they become acquainted. A good pan will flood easily and have a chick-safe grill design to keep chicks from getting trapped. A deep V-shaped bottom will help it nestle into the litter and give the birds easy access.

### Water

Water is the most important nutrient. Waterers should be cleaned, flushed, and filled before placement. Lines must be at the proper height to ensure the maximum amount is being consumed by the bird. For chicks, the nipple should be at eye height so that they can see the water droplet on the end. A supplemental trough could be used to improve accessibility to fresh water. As birds grow, the lines should be raised so they are comfortable drinking from an upward angle. A line that is too high or too low results in reduced consumption and wet floors.

Mineral load, pH and bacteria affect water quality. Minerals in the water supply like iron, sodium, or magnesium in excess can have adverse effects on bird health and performance. Sodium levels



over 50 ppm may have a laxative effect. Magnesium and calcium are responsible for hard water build up and can limit the flow of water through the pipes.

Birds don't like water with a high pH. It tends to have a bitter taste and may reduce consumption. A pH above 8 may prevent sanitizers from performing their best. A pH below 5 may affect intestinal health or damage metal drinker system components. The ideal range is 6.2-6.8.

Water lines can be host to loads of bacteria. Biofilm can develop quickly and is a breeding ground for E. coli, salmonella, Bordetella, and more. It's impossible to know what is in the water without testing it first. Testing and treating the water between flocks and having a sanitation procedure in place will keep water safe for drinking.

### Temperature

Birds cannot fully regulate their own body temperatures until about two weeks of age. The temperature

in the barn has to be just right. Extreme temperatures in either direction can cause adverse effects on growth or well-being. Low barn and floor temperatures will cause birds to huddle together for warmth. They will spend more energy keeping themselves warm, rather than growing. Cold temperatures makes them susceptible to ascites and other disease, as well.

When the space is too hot, chicks will not eat properly. They may be lethargic, or crowd the walls. High temperatures can lead to dehydration, causing birds to drink more and eat less.

There is a temperature sweet spot that ensures bird comfort, and it changes as they grow. Make sure floors are properly warmed pre-placement to around 90 degrees. Whether using tube heaters or brooders, there will be a temperature gradient. This is important to have so that birds can find an area that is suitable for them. As chicks grow, they require



less supplemental heat to reach their thermoneutral zone. Carefully observe the birds and adjust the temperature, as necessary.

### Air quality


Fresh air is essential for healthy birds. A carefully designed ventilation program will deliver the appropriate amount of fresh incoming air to control the humidity level in the house. By controlling for humidity, we also control ammonia and other unsafe gases, like carbon dioxide or carbon monoxide. Ammonia concentrations above 25 ppm can cause stress, respiratory irritation or damage, and other health complications. Ammonia related problems are exacerbated by high humidity and moisture levels in the house.

Over-ventilating may chill the birds in cool weather, but under-ventilating is often much worse.

Observe the birds frequently to ensure their comfort.

### Light

Longer day periods result in better weight gain because birds will eat more. Chicks require brighter light

to develop proper sight and find feeders and drinkers. Using an intermittent lighting program will encourage them to rest and eat at regular intervals. As the birds grow, lights can be dimmed to about 1 foot candle. 

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## Solar Panels

Have you seen more solar panels popping up on farms? They are quickly gaining popularity as energy prices surge, and with green energy rebates and incentives, they can be surprisingly affordable. Energy costs on a typical wean-to-finish site could run about \$40,000 per year. The energy requirements for that farm are not liable to change from year to year, but the price of the energy is always increasing. Solar panels allow you to escape the cost of energy inflation.

One farm in Indiana has used a solar array to reduce their farm energy demand by 75%, which has also reduced their energy cost by 75%. The project is one of Indiana's largest confined animal feeding operation solar arrays. It

will produce more than 200,000 kilowatt-hours of energy per year. The project was awarded a Rural Energy for America Program grant by the USDA, which helped cover some of the initial investment. Net metering and tax incentives will produce savings that will defray the cost of the project by over 65%.

If you are considering solar energy for your own farm, there are some things you should know to make an informed decision.

Solar panel systems are sized based on the required energy needs of the barn during peak energy use. To get an accurate idea of this, you'll have to review the last 12 months of energy bills to know your kilowatt hours for each month. Likely there will be some points throughout the

year where your solar panels out-produce what the energy needs of the farm are. You may be able to sell back to the power grid, or you could opt for a battery, so that you may store the energy for later use.

During winter months there will be some maintenance required to keep the panels clear of snow. If your area gets a lot of snow and climbing on the roof is unsafe, perhaps ground-mounted panels will be a better fit.

You can do some simple math to figure out how many solar panels you will need to operate your farm. You'll first need to add up your energy usage in kilowatt hours. You'll want both an annual total and a monthly total. Then you'll need to decide how much power you want from the solar panels.



You cannot get 100% usage year-round because of fluctuating weather patterns and power usage. If your energy company has net metering or a solar buyback program, then you can design a system that gets you some energy credits in the lower producing months. If net metering isn't an option, then shoot for a solar array that covers around 80% of your energy costs. This keeps installation costs lower. If you choose to invest in solar batteries, you can plan to zero out your power bill.

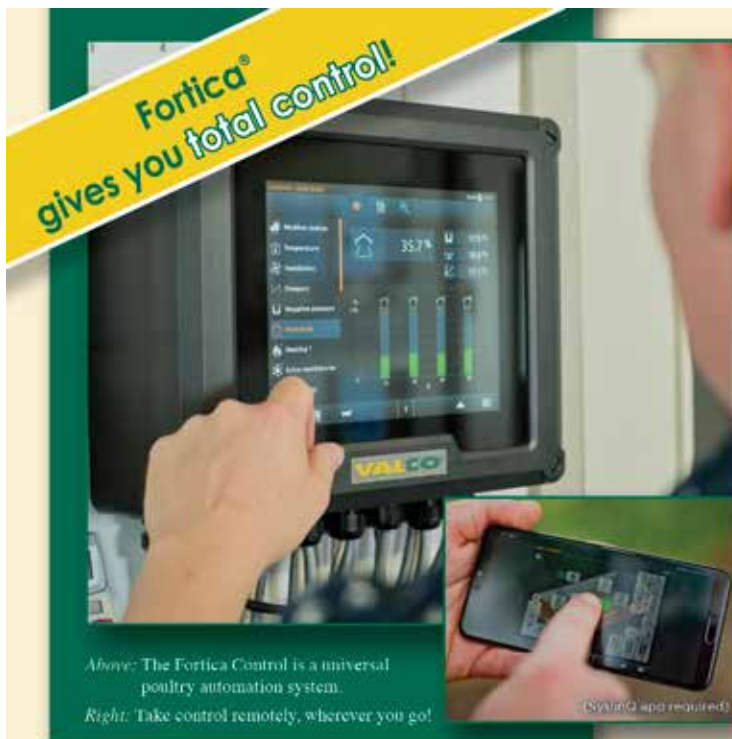
You will need to determine your average daily sunlight in your area. You can get general figures online, or you can calculate a specific number

based on the tilt of your roof, which way it faces, nearby obstructions, and many other factors. You can use the PV Watts calculator (<https://pvwatts.nrel.gov/>) and follow the instructions for a detailed look at how much AC energy you can produce and the dollar value of that energy. Using the kilowatt hours per month and the average sunlight per day you can calculate the kilowattage of your solar array. And then you can use the wattage to determine to total number of panels that you will need on your farm.

In Pennsylvania, Country View Family Farms is installing over 8,000 solar panels at four of its farm locations. The solar fields will redirect

a percentage of electricity generated back to the farm, generating almost 3 million kilowatt-hours of energy. In addition to running the farm, the solar fields will offset carbon dioxide production from other sources of energy. Their 3 million kWh are equal to 221,769 gallons of gasoline, 4,562 barrels of oil, or 3.336 million pounds of coal burned.

If you think greener energy and more affordable power could be a good fit for you, contact your local energy company. To learn more about policies in your state check the Database of State Incentive for Renewables and Efficiency ([dsireusa.org](http://dsireusa.org)).



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## Grower Spotlight

### Riaan & Daleen van Dyk

Daleen van Dyk grew up around sheep with her grandparents in South Africa, often helping them to shear, wean, or do daily chores. Upon moving to the States, she and her husband, Riaan, were blessed to find a little slice of paradise at the end of a dusty road in Iowa where they began their own legacy of sheep farming, many years later.

In 2019, they bought 129 Polypay ewes and housed them in a converted horse barn on their property. The ladies have almost 60 acres of grazing hills to roam, so they aren't inside much, but do spend the winters and lambing

season close to the stables, where they are protected from the harsh weather conditions and easily accessible for veterinary care.

In the beginning, the labor involved in caring for the herd was intense. The sheep were fed corn on the ground or in wooden troughs, and the van Dyk's were finding it hard to meet the nutritional needs of their young sheep.

To better provide for the maiden ewes, they invested in a VAL-CO Feed Delivery System installed by Mike Kruid of Madison Farm Supply. Kruid took the time to thoroughly research the best materials, design a custom

winchable feeding system, and install it all himself. This feed system allows Daleen and Riaan to provide improved care, as they can medicate through the feed boxes. The automated system works on a timer. Each sheep is fed the correct amount at the right time, even without someone being there. Given that both of them have full time jobs and are often away from home during the day, this technology has allowed them to provide more consistent care.

Today, their herd has grown to around 250 ewes. The sheep are provided exceptional nutrition at every stage of life, a comfortable routine with ample free-range grazing time balanced with safe sleeping space and quiet eating time.

The sheep spend the night in the barn. After breakfast, they go out to pasture with their Great Pyrenees guard dogs. During the winters, the sheep are inside 24/7, until spring when they return to pasture for lambing season. The mama sheep often have twins or triplets. At the end of the year, a selection of sheep are sold at auction, and the remainder are bred for the next year.





If you are interested in learning more about their operation, or would like to purchase a sheep or two of your own, you can visit their website – [polypayleen.com](http://polypayleen.com).



# Resources

## Incineration

by Ericka Mongeau

Incineration as a means of mortality disposal is slowly gaining popularity. Incineration is a great option for managing small carcasses, such as poultry or swine.

Incineration is the thermal destruction of carcasses by auxiliary fuel such as propane, diesel, or natural gas. It is a safe and effective means of disposal. It is biologically safe and eliminates the threat of disease.

The carcass is consumed by fire and heat and reduced to ash. One hundred pounds of carcasses can be reduced to one gallon of ash.

When operated correctly, cremators emit no unpleasant odors. Regular cleaning and maintenance are required to keep the incinerator functioning properly. They should be loaded and operated according to the manufacturer's instructions.

Commercial units are available with oil or gas burners and usually are equipped with automatic timers to ensure proper burn. Smoke discharge stacks for such equipment also may be fitted with after-burning devices that recycle fumes to complete gas combustion

and diminish odors. Regardless of whether these features are present, incinerators must be tested, approved, and rated for carcass disposal in accordance with federal or state air quality regulatory agencies. In some instances, a permit may be required to install and operate an incinerator.

Cremators allow growers the convenience of disposing mortalities as they are generated, eliminating

the need for temporary storage.



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- Leaves no unpleasant odors.

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- Load, set timer, start (afterburner first, then main burner). Clean out ash (leaving any larger fragments) when cool. Repeat.
- Dispose of ash responsibly according to local guidelines.

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# In The Spotlight

## Employees



**Name:**  
Stephen Linde

**Position:**  
Product Manager

**Where were you born?**  
Lancaster, PA

**Hobbies:**  
I enjoy playing ice hockey and ping pong, and working on my family's farm.

**Favorite family tradition:**  
Thanksgiving celebrations with extended family.

**First Job:**  
Helping feed calves on my family's farm.

**Biggest pet peeve:**  
When mayo is not an available condiment when burgers are served.

**Favorite Quote:**  
“You miss 100% of the shots you don't take – Wayne Gretzky” – Michael Scott”

**Describe yourself in 5 words:**  
Hardworking, Curious, Sincere, Competitive, Jackhammer

**If you could share a meal with anyone, living or dead, who would it be and why?**  
I would want to share a meal with my grandmother. She was one of the best cooks in the world so the meal would be amazing, and she was someone that I respected and loved. She always had great stories to share and some great words of wisdom.

**What changes have you seen in your years in the industry?**  
I think one of the big changes that I have seen is the increased importance of good ventilation. People want

higher air speeds in their houses during hot weather with better mixing of the air during minimum ventilation. Also, the efficiency of products is becoming more important with energy prices increasing.

**What technology do you see coming in the industry?**  
Electronics are starting to be more and more integrated into various systems and products.

**What excites you about your work and makes it easy for you to come to everyday?**  
The opportunity to work with the team at VAL-CO as we make improvements across a wide range of products and processes. It's exciting to see VAL-CO grow as we take care to design the right products with a focus on quality and user-friendliness, all while keeping the customer experience in mind. Personally, I have enjoyed seeing how the products work in the field as my father has VAL-CO equipment on his farm; I like knowing I am helping to offer quality products to help feed a hungry world.

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## Products



### Liberty One™ Aviary Colony Nest

The **Liberty One** is designed to make birds comfortable going into an open nest to lay eggs. The larger nest holes and nest pads are inviting to the birds which helps prevent floor eggs and leads to greater output of high-quality eggs. Ventilation holes in the partitions help provide an ideal environment. An expeller pushes birds out when

necessary to aid in keeping the nest pads clean and help prevent broodiness.

The Liberty One, manufactured with steel, has legs that can be set at different heights, even having the nests sit directly on the floor. An egg elevator collects eggs from any height belt and can be released at a predetermined height for manual collection or delivery to a cross conveyor.

### Fortica® Whole House Controller

The **Fortica** is a universal poultry farm automation system. The full touchscreen operation makes this system extremely user friendly and clear. This all-in-one system is suitable for all types of broilers, layers, breeders and pullets. It regulates, controls and monitors all your poultry house processes, such as climate, feed, water, lighting, animal

weight, and egg count. A new Energy Mode maximizes savings you can get by using variable speed fans. The improved Precision Heating setting provides greater efficiency and will help you save propane. The Fortica system can also be linked to a remote app and innovative Farm Management software for easy tech support.



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- **Bockett Building Supply** - *Truman, MN*
- **Buschur Equipment** - *Versailles, OH*
- **Central Greenhouse** - *Cumberland, VA*
- **Classic Poultry Equipment** - *Resaca, GA*
- **Enve Acres Ag Supply** - *Owen, WI*
- **Farm Depot** - *Mt. Pleasant, TX*
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- **Jones Poultry & Livestock Equipment** - *Beulaville, NC*
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- **Taylorville Poultry** - *Taylorville, MS*
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